

U.S. Patent Application Serial No. **10/511,442**  
Response filed July 6, 2006  
Reply to OA dated March 6, 2006

### **REMARKS**

Claims 1,3,5,6,8,10-13,15-17 and 19-21 are pending in the application.

The amendments to the claims are supported in the specification as follows: Claim 1: (p.2, lines 17-18; p.6, lines 22-23; p.16, line 7; and claim 9); Claims 3, 15 and 19: (p.19, line 10); and Claims 13 and 17: (p.2, lines 17-18; p.6, lines 22-23; p.16, line 7; claim 9; p.19, lines 20-25 and p. 20, lines 1-5). The applicants respectfully submit that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **March 6, 2006**.

### **Claim Objections**

**Claims 5, 6 and 9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. (Office Action, p.2)**

Claim 1 has been amended from "about -90 to about 10 °C" to --about -90 to about 60 °C- as supported in the specification on p.6, line 23. The amendment to claim 1 overcomes the stated objection for claims 5 and 6. Claim 9 has been canceled.

**Claims 5 and 11 are objected to because of the following informalities: Claims refer to HFC-365mfc but correlation between 1,1,1,3,3-pentafluorobutane and HFC-365mfc is not established in the independent claim from which it depends. (Office Action, p.2)**

As suggested by the Examiner, "(HFC-365mfc)", as supported on p.2, lines 17-18, has been inserted after 1,1,1,3,3-pentafluorobutane in Claim 1 to address and overcome the objection.

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**Claim Rejections**

**Claims 1, 3, 5, 6, 8-13, 15-17 and 19-21 are rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement. (Office Action, p.3)**

Claims 1, 13 and 17 have been amended to recite halogen containing compounds. This should address and overcome the rejection.

**Claims 5, 6 and 9 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office Action, p. 4)**

The amendment of Claim 1 from “about -90 to about 10 °C” to --about -90 to about 60 °C-- addresses this rejection.

**Claims 1, 3, 5, 6, 8-13, 15-17 and 19-21 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office Action, p. 5)**

The term “low-boiling” has been deleted from claims 1, 13 and 17 making this rejection now moot.

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**Claims 13, 15, and 16 are rejected under 35 USC112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office Action, p. 5)**

Claim 13 has been amended to recite --a polyol-- instead of "the polyol" thereby addressing the rejection.

**Claims 1, 3, 5, 6, 8-13, 15-17 and 19-21 are rejected under 35 USC 102(e) as being anticipated by WO 01/72880, US 2003/0055118, and Brandoli et al. (6,759,444), each taken individually, but referred to as the group BRANDOLI ET AL. (Office Action, p. 6)**

For the following reasons, BRANDOLI ET AL. does not anticipate the invention as now claimed.

(1) Initiator

BRANDOLI ET AL. describe dialkylene glycols as initiator (WO 01/72880, p.6, lines 3 to 15). Such an initiator is used to prepare *polyether or polyester polyols*, and therefore is not contained in a blowing agent. In contrast, *ethylene glycol* compounds used in the claimed invention are contained in the blowing agent. Given this, the dialkylene glycols disclosed in BRANDOLI ET AL. and the ethylene glycol compounds of the claimed invention have different purposes and forms of use.

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(2) Surfactant

BRANDOLI ET AL. teach *polyethylene glycol ethers* of long-chain alcohols as surfactants (WO 01/72880, p. 9, lines 26-27). The long-chain alcohols are usually aliphatic alcohols having 12 or more carbon atoms (see enclosed Reference 1, underlined part: “higher alcohol usually refers to an aliphatic alcohol having 12 or more carbon atoms (p.756)” and “long-chain fatty acid = higher fatty acid (p.1433)”); *Kagaku Daijiten*, 1<sup>st</sup> edition, 1<sup>st</sup> print, published October 20, 1989, Publisher: Minako Ozawa, Publishing company: Tokyo Kagaku Dozin Co., Ltd.).

In contrast, the *ethylene glycol* compounds used in the claimed invention are represented by formulae (I) to (III), wherein  $a = 1$  to  $4$ ,  $c = 1$  to  $4$ , and  $k = 1$  to  $4$ , which means that the number of carbon atoms of the portion bound to  $(\text{OCH}_2\text{CH}_2\text{O})_b$  or  $j$  via each ethers linkage is 4 or less. Accordingly, the polyethylene glycol ethers of long-chain alcohols disclosed in BRANDOLI ET AL. and the ethylene glycol compounds of the claimed invention are clearly difficult in structure.

(3) Crosslinking agent or chain extender

BRANDOLI ET AL. teach ethylene glycol and diethylene glycol as *crosslinking agents or chain extenders* (WO 01/72880, p. 11, line 4). Crosslinking agents or chain extenders usually have crosslinkable reactive groups at their ends. Indeed, ethylene glycol and diethylene glycol taught in BRANDOLI ET AL. as crosslinking agents or chain extenders have OH groups at both ends.

However, ethylene glycol compounds of the claimed invention are represented by formulae (I) to (III) wherein  $a = 1$  to  $4$ ,  $c = 1$  to  $4$ , and  $k = 1$  to  $4$  (i.e.,  $a \neq 0$ ,  $c \neq 0$ , and  $k \neq 0$ ), which means there

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are no terminal crosslinkable reactive groups. Therefore, the ethylene glycol compounds of the invention as now claimed do not act as crosslinking agents or chain extenders. Given this, ethylene glycol and diethylene glycol of BRANDOLI ET AL. and the ethylene glycol compounds of the claimed invention have clearly different structures and functions.

The glycol compounds of BRANDOLI ET AL. and the glycol compounds represented by formulae (I) to (III) of the present invention are therefore chemically different.

Further, BRANDOLI ET AL. does not describe amide compounds. The claimed invention, a requirement of which is for the organic blowing agent to comprise at least one member selected from the group consisting of specific ethylene glycol compounds and amide compounds, is chemically different from the invention disclosed by BRANDOLI ET AL.

Based on this showing, it is respectfully requested that the anticipation rejection be reconsidered and withdrawn.

**Claims 1, 3, 5, 6, 8-13, 15-17 and 19-21 are rejected under 35 USC 102(e) as being anticipated by EP 1,219,674. (Office Action, p. 6)**

EP1,219,674 discloses the use of ethylene glycol or propylene glycol as an initiator to prepare polyols (p. 3, [0012], lines 17 to 24), and the use of ethylene glycol as a crosslinking agent (p. 3,

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[0015], lines 35 to 40). As described above, glycol compounds used as initiators or crosslinking agents are clearly different from the ethylene glycol compounds represented by formulae (I) to (III) of the claimed invention, as explained above.

EP1,219,674 teaches polyamides and polyesteramides as polymeric polyols (p. 3, [0012], lines 24 to 26), however it does not disclose amide compounds contained in a blowing agent as does in the present invention.

Consequently, the claimed invention, a requirement of which is for the organic blowing agent to comprise at least one member selected from the group consisting of specific ethylene glycol compounds and amide compounds, is chemically distinct from the disclosure of EP1,219,674.

Effects attained by the organic blowing agent comprising specific ethylene glycol compounds and/or amide compounds are described in paragraph [0065], lines 10 to 28 on page 4 in the present specification. In contrast, BRANDOLI ET AL. and EP1,219,674 do not disclose any effects attained by using such organic blowing agent comprising specific ethylene glycol compounds and/or amide compounds. Therefore, it is not readily conceivable for a person skilled in the art to predict the effects attained by the present invention.

The present invention has not only novelty but also unobviousness over BRANDOLI ET AL. and EP1,219,674.

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**Claims 1-21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-46 of copending Application No. 10/493,215. (Office Action, p. 8)**

Again, the rejection is a provisional obviousness-type double patenting rejection over co-pending application Serial No. 10/493,215 (Your Ref: 200420/US).

The status of application Serial No. 10/493,215 as of July 6, 2006 was that no first Office Action or Notice of Allowance has been issued yet. It is assumed that if this application issues as a US patent before the co-pending application, the Examiner will remove the rejection voluntarily and simply make an obviousness-type double patenting rejection over the co-pending application.

In view of the aforementioned amendments and accompanying remarks, the claims, as amended, are in condition for allowance, which action, at an early date, is requested.

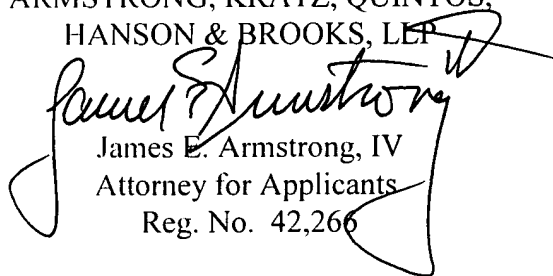
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosure: Reference 1 (3 sheets)

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